

EDWARD N. KENT.

[To accompany Bill H. R. No. 465.]

MARCH 26, 1858.

Mr. MACLAY, from the Committee on Patents, made the following

REPORT.

The Committee on Patents, to whom was referred the petition of Edward N. Kent, present the following report:

Mr. Kent is the inventor of an apparatus for separating gold and silver from foreign substances, which he has patented under two several patents, dated December 4, 1855, and February 26, 1856.

This apparatus was introduced into the United States assay office in August, 1855, and the benefits arising from its use were such as to induce the director of the Mint at Philadelphia to request Professor Booth, the melter and refiner of the mint, to visit the assay office, examine the apparatus, and furnish him with a report. Professor Booth performed this duty, giving to the director of the mint a detailed description of the machine and its operations, and also a statement of its value for sweep-washing in the United States Mint, its advantages in the saving of space, time, and the loss of many of the finer particles of gold and silver in the process of their liberation from quartz or other hard substances, and concluding his report with the following recommendation:

“In consideration of economy in time, in labor and in space, of neatness and health of workmen, and of greater efficiency in cleaning grains of gold and diminishing wastage, I recommend the machine invented by Mr. Kent for introduction into the minting establishments of the United States. It will be observed that this recommendation is made without reference to saving in the sale of sweeps, which I believe, however, will result from the use of this machine.”

This report was so favorable as to induce the director of the Mint, with the approval of the Secretary of the Treasury, to order the apparatus to be introduced into all the principal minting establishments of the United States, in which it has been, and continues now to be, in successful operation, and, according to the testimony of the officers of the Mint and assay office, with great pecuniary benefit to the government.

Mr. Kent now petitions Congress to appropriate and pay to him a just and reasonable compensation for the use of his invention, agreeably to the spirit and intent of the patent laws, the great object of which is to protect inventors, and guarantee to them the exclusive right to the use of their inventions for a term of years. It is evident that it would be unjust for the government to use Mr. Kent's invention without making to him a just and reasonable compensation for the use of it in the mints of the United States. To do otherwise the government would be violating its own laws and wrong the inventor, whom the laws are designed to protect.

It appears, therefore, to be just that the government should appropriate to Mr. Kent a portion of the amount saved by his invention, or purchase, for a reasonable sum, the perpetual right for the use of the government, as in the precedent established in the case of Rufus Tyler, (see 5 Statutes at Large, 688,) in which \$2,500 was appropriated by Congress for the purchase of the perpetual right for the Mint and branch mints of the United States to the use of a patented apparatus for counting coins.

It is shown by the evidence of the officers of the mint and assay office, hereto annexed, that a saving of \$16,000 has already been made in the assay office alone, and that the saving at the two establishments is \$8,600 per year by the use of Mr. Kent's invention. At this rate, the saving in fourteen years (the term of the patent right) will be \$120,400. Besides, at New Orleans and San Francisco, from which no reports have been received, an equal saving, which the witnesses assume to be a fair basis of calculation, would make the amount, during the continuance of the patent, exceed \$240,000.

The Committee on Finance, of the Senate, on the 9th of March, 1858, recommended to that body the passage of a bill for the relief of the petitioner, similar to the one herewith submitted. It was accompanied by a report, of which the following is an extract:

"It is quite obvious that the use of Mr. Kent's apparatus is of too much importance and value to be dispensed with in the minting operations of the government. It is equally obvious that it can only be used legally with his consent. Were it otherwise, there is no reason why the United States should not afford him a just and reasonable compensation for great benefits received through his labor and ingenuity. One of the witnesses, (Mr. Torrey) who has been connected with the assay office from its commencement, says, in a letter to Mr. Kent: 'Your apparatus is constructed on the soundest principles of mechanical and chemical science, and is, I think, hardly susceptible of much improvement.'"

"All the principal officers connected with both the establishments before named concur in the opinion that Mr. Kent is honestly entitled to remuneration, and that the continued use of his apparatus in all the minting operations of the United States cannot be dispensed with.

"The case is not without precedent. The sum of \$2,500 was heretofore appropriated by Congress for the purchase of the perpetual right to use, in the Mint and branch mints of the United States, an apparatus invented by Rufus Tyler for counting coins.—(United States Statutes, vol. 5, p. 688.)

"The petitioner thinks that he is entitled to receive from the government the amount of \$20,000 for the perpetual right to use his apparatus in all the minting establishments of the United States. Taking into consideration the great benefits conferred, the fact that this sum is only one-twelfth of the amount which will be actually saved to the government through his instrumentality, and the very limited compensation which he will be likely to receive from other quarters, your committee think his demand not unreasonable, and accordingly report a bill for his relief."

In view of these considerations the Committee on Patents also report the accompanying bill.

To the Senate and House of Representatives in Congress assembled:

The petition of Edward N. Kent, of the city of New York, respectfully represents, that your petitioner is the inventor of a new and useful apparatus for separating gold from foreign substances, the exclusive right of which has been secured to him by "letters patent" according to the laws of the United States. By order of the director of the Mint, with the approval of the Secretary of the Treasury, this apparatus has been introduced into, and is now in successful operation for washing sweep, at the United States Mint at Philadelphia, the United States assay office at New York, and at the United States branch mints at New Orleans and San Francisco.

A description of this apparatus, and testimonials from the officers of the United States Mint and assay office, were presented to the Senate at the last session of Congress; copies of which are herein enclosed, together with additional testimony from those officers, containing evidence of the practical value of the invention to the government, from the experience gained by the workings of another year. From this evidence it will be observed that the saving to the government effected by the use of this apparatus at the Mint (where *silver* is principally worked) is \$1,600 per year, and at the assay office (where *gold* is principally worked) is \$7,000 per year. At this rate, the saving to the government in fourteen years (the term for which the exclusive right has been secured to the inventor) will be, at the mint and assay office, \$120,400. In addition to this positive result, the saving at the branch mints at New Orleans and San Francisco, (from which no reports have yet been received,) will doubtless be as much more, making the entire saving in fourteen years \$240,800.

But the inventor of the apparatus, by which this saving is effected, has thus far received no compensation or reward from the government for the use of this valuable invention. He therefore prays that the sum of \$20,000 be appropriated and paid to him, as a just and reasonable compensation for the perpetual use of his invention in all the minting establishments above mentioned, and any others in which it may be subsequently introduced by the government.

EDWARD N. KENT.

NEW YORK, *January* 11, 1858.

UNITED STATES ASSAY OFFICE,
New York, December 5, 1856.

DEAR SIR : I entirely approve of your purpose to make application to Congress for suitable compensation for the sweep-washing machine invented by you, and which is now in use at this office and at the Mint.

Having been cognizant of the investigations and experiments which led to this invention, and believing that your labors in this respect were additional to those required in the discharge of your official duties, I am clearly of opinion that the government should compensate you for the benefits it has received at your hands.

Of the practical working of your machine, and the saving to the government effected by its use at this office, I will cheerfully testify, if it should be deemed desirable.

Very respectfully, your obedient servant,

S. F. BUTTERWORTH,
Superintendent.

EDWARD N. KENT, Esq.,
New York.

MINT OF THE UNITED STATES,
Philadelphia, December 9, 1856.

SIR : I have received your letter of the 5th inst. In my communication of the 15th October, 1855, to Mr. Butterworth, the superintendent of the assay office at New York, I expressed an opinion highly favorable to the introduction of your improved apparatus for separating gold and silver, with the minting establishments of the United States. The expectations then expressed have been fully realized. Since last spring we have had your excellent apparatus in constant use at the Mint of the United States, and, with the approval of the Secretary of the Treasury, it will be used at the branch mints at San Francisco and New Orleans. The apparatus for these institutions being none in the course of construction.

I regard the process you have invented as a decided improvement upon the apparatus heretofore used for separating gold from the mint sweeps ; and its introduction into the minting establishments of the United States has been, and will continue to be, of advantage to the government on the score of economy. I may add, also, that it performs the work with greater neatness and efficiency than the machines heretofore used.

I am, very respectfully, your obedient servant,

JAMES ROSS SNOWDEN,
Director of the United States Mint.

EDWARD N. KENT, Esq.,
New York.

PHILADELPHIA, *December 17, 1856.*

DEAR SIR: Please accept the following as my opinion of your gold-washing machine, which has been in operation in my department of the Mint since last spring. Having used the older apparatus, and improved it, from time to time, during several years, I think I can make a fair comparison between the two modes of collecting gold and silver from our sweep.

Your apparatus is far more cleanly, because you require less grinding, and avoid the dry sifting; for the same reason it is not at all injurious to the health of the operative; whereas, by the former method I had the well ground sweep passed through sieves of increasing fineness, and the effect of the dust on the men was always a source of annoyance and regret to me; and although I had an arrangement to sift under cover to avoid dust, yet I found it almost impracticable to induce its constant use.

Your arrangement proves economical in labor, so that I am satisfied that one, and occasionally another operative are amply sufficient to superintend its operation, while two, and often three, worked with the older apparatus.

Your mode of operating is also more efficient than the older method in producing a poorer sweep, the loss on the sale of which is less than by the method we formerly pursued.

I may observe that several circumstances have conspired to prevent my determining this last point so satisfactorily as I have wished, such as the large accumulation of sweep consequent upon stopping the grinding operations during the late repairs of the Mint, so that we were obliged to hasten our operations more than we desired; and further, the great excess of silver over gold worked in this Mint, which may possibly require some modification in the mode of operating. Nevertheless, I have sufficiently witnessed the operation of your machine to be convinced that, with an excess of gold over silver, it is more efficient than our former process in making poorer sweep.

On all the three points above noted, your apparatus proves a saving to the government, and I think your calculations from results as to the amount of saving are fully warranted by facts.

Very truly, yours, &c ,

JAS. C. BOOTH.

EDWARD N. KENT, Esq.,
New York.

UNITED STATES ASSAY OFFICE,
New York, December 18, 1856.

MY DEAR SIR: I have received your letter asking my opinion of your method of treating "sweep," or the waste auriferous materials of this office.

Having been connected with the assay office from its establishment, and having seen the old method used, as well as the new, I am able to give a decided opinion as to their comparative merits. By the former plan of operating an immense quantity of black dust was liberated and diffused through the entire building. It was exceedingly annoying to all the operators, and especially to the assistant assayers and the workmen in the laboratory, whose apartments were near to the mills and sifting apparatus. The dust was also injurious to the health of the men, and one of them fell a victim to its effects on his lungs. Since your apparatus has superseded the old arrangements, we have been almost entirely free from the annoyance of dust, and the men no longer complain.

Your apparatus is constructed on the soundest principles of mechanical and chemical science, and is, I think, hardly susceptible of much improvement.

As to the comparative economy of the old and new processes, the records of this office will show conclusively that your apparatus has been the means of saving a handsome sum to the government.

I am, my dear sir, truly yours,

JOHN TORREY.

E. N. KENT, Esq.

UNITED STATES ASSAY OFFICE,
New York, December 12, 1857.

SIR: I have received your letter of the 1st instant, and now comply with your request to furnish you an official statement of the working of your sweep-washing machine since its introduction into this office.

I find that the system of sweep-washing in use at this office prior to July, 1855, involved the labor of three men in washing, sifting, &c., a considerable amount of fuel, crucibles, fluxes, and labor in fluxing, and a loss on the sale of the sweeps of $31\frac{4}{10}$ per cent. of its gross value at 35 cents per pound. The fairest way to determine the value of your invention is to compare its working with the old system, and thus show what saving has been effected by the change. With this view I have to submit the following statement of the actual expenses attending our sweep operations since the introduction of your machine in July, 1855, compared with the expenses incident to the old system for the same period, and upon the same amount of material, as determined by our former experience. From July 1, 1855, to October 31, 1857, the amount of sweeps produced and sold at this office was 287 barrels, weighing 98,514 pounds. The following comparison of the working of your machine with the old system, exhibits the saving effected under three several heads, viz:

	Kent's machine.	Old system.
	July 1, 1855, to Oct. 1, 1857.	Estimated for same period.
1. Labor of sweep-washing -----	\$1,460 00	\$4,380 00
2. Crucibles, fluxes, and labor -----	300 00	7,000 00
3. Loss on sale of sweeps -----	4,300 00	10,800 00
Total -----	6,060 00	22,180 00

The above comparison shows a very material saving by the use of your machine in each of the items, the expense of crucibles and fluxing being almost entirely obviated. The aggregate saving at this office since the introduction of your apparatus has been over \$16,000, or very nearly \$7,000 per year.

In view of the foregoing statement, which I believe to be less favorable to your invention than a rigid calculation would show, the importance of securing for the government a right to its use is manifest. I do not hesitate, therefore, to express my approval of your purpose to ask Congress for compensation for the use of your machine at the several mint establishments, and the hope that your application may be successful.

Very respectfully, your obedient servant,

SAM. F. BUTTERWORTH,
Superintendent.

EDWARD N. KENT, Esq.,
New York.

MINT OF THE UNITED STATES,
Philadelphia, December 21, 1857.

DEAR SIR: In reply to your recent letter I take pleasure in stating that the opinion I have heretofore given, that your sweep-washing apparatus is highly advantageous and economical to the Mint, is fully confirmed by subsequent experience.

The statement I gave you on a former occasion was predicated upon its operations during six months, as compared with the older process during a like period. We have now had an experience of about eighteen months, and I am well satisfied that the saving effected by the use of your machine is at the rate of, at least, sixteen hundred dollars per annum.

I am, very respectfully, your obedient servant,

JAMES ROSS SNOWDEN,
Director of the Mint

EDWARD N. KENT, Esq.,
New York.

MINT OF THE UNITED STATES,
Philadelphia, January 2, 1858.

SIR: I have to acknowledge the receipt of your letter of the 28th ultimo, and to state that I have not received any reports from New Orleans, nor from San Francisco, as to the workings of your sweep apparatus. The difference between the economical results obtained at the Mint and at the assay office, to which you refer, may be due to the fact that the Mint sweeps contain a larger proportion of silver, our operations being considerably greater in that metal than in gold.

I beg to refer to my letters of the 15th of October, 1855; the 9th of December, 1856; and the 21st of December last, as presenting my opinion of your excellent apparatus.

I am, with great respect, your obedient servant,
 JAMES ROSS SNOWDEN,
Director of the Mint.

Prof. EDWARD N. KENT,
New York.

U. S. ASSAY OFFICE, NEW YORK,
Treasurer's Department, January 16, 1858.

SIR: In compliance with your request of the 29th ultimo, I take pleasure in stating that the books of my office show a very considerable saving in the sale of our sweeps since the introduction of your sweep-saving machine. This is owing, as you well know, to the impoverishment which it effects in the sweeps before they come into my hands for sale. Formerly, when the sweeps contained gold and silver worth from thirty-five to forty cents per pound, their sale was attended with a loss of from ten to twelve cents per pound. The value of our sweep is now only about seven cents per pound, and I find our recent sales of these impoverished sweeps are attended with a loss of less than five cents per pound. The saving thus effected in this single item of "loss on sale" is about six cents per pound. The sweeps of 1857, amount to about fifty thousand pounds, showing an aggregate saving of about \$3,000.

What I have said above relates only to the diminution of "loss on sale" of sweep since the introduction of your machine. I am well aware that it effects an important saving in the labor and materials employed; but as this does not fall under my official notice, I am unable to state its extent.

I have no hesitation in testifying to the value of your invention, nor in expressing my conviction that you are fully entitled to receive from Congress a reasonable compensation for its use at this office and at the mints.

Very respectfully, your obedient servant,
 JOHN J. CISCO,
Treasurer.

EDWARD N. KENT, Esq.,
New York.